

WHAT IS CLAIMED IS:

1. A method of filling buffer chamber in a print head with bubble, using a print head comprising a plurality of  
5 ejection openings through which ink is ejected, a plurality of channels that are each in communication with a corresponding one of the plurality of channels, a common liquid chamber for supplying ink to the plurality of channels, buffer chamber located at end of an arranged  
10 direction of said channels to restrain vibration of ink in said common liquid chamber which occurs as a result of ejection of the ink, and bubble generating means for filling the buffer chamber with bubble, comprising the steps of:

15 filling said buffer chamber with bubble by driving said bubble generating means; and

executing a recovery process of discharging the ink through said ejection opening after said bubble filling process.

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2. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

in said recovery process step, excess bubble generated during said bubble filling step are removed.

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3. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

during said bubble filling step, bubble is allowed to grow up to location of said channel adjacent to said buffer chamber by driving said bubble generating means.

- 5 4. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

the bubble generated by driving said bubble generating means is obtained by precipitating a gas dissolved in the ink.

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5. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

during said bubble generating step, said bubble generating means is driven to generate bubble while  
15 preventing film boiling from occurring in the ink.

6. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

said plurality of channels are each provided with an  
20 electrothermal converter as means for generating ejection energy that causes the ink to be ejected, and

during said bubble generating step, bubble is generated using said electrothermal converter together with said bubble generating means.

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7. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

said recovery process is a suction recovery process comprising sucking and discharging the ink through said ejection opening.

- 5 8. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

said recovery process is executed before a printing operation.

- 10 9. The method of filling buffer chamber in a print head with bubble according to Claim 1, wherein

before said recovery process, said print head is heated at a temperature used for normal printing or higher.

- 15 10. A printing apparatus able to print an image on a printing medium, using a print head comprising a plurality of ejection openings through which ink is ejected, a plurality of channels that are each in communication with a corresponding one of the plurality of channels, a common  
20 liquid chamber for supplying ink to the plurality of channels, buffer chamber located at end of an arranged direction of said channels to restrain vibration of ink in said common liquid chamber which occurs as a result of ejection of the ink, and bubble generating means for  
25 filling the buffer chamber with bubble, comprising:

recovery process means for causing the ink to be discharged through said ejection opening, and

said recovery process means causing the ink to be discharged through said ejection opening after said bubble generating means has filled said buffer chamber with bubble.

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11. The printing apparatus according to Claim 10, wherein said recovery means discharge the ink through said ejection opening to remove excess bubble.

10 12. The printing apparatus according to Claim 10, wherein said bubble generating means allows bubble to grow up to location of said channel adjacent to said buffer chamber.

15 13. The printing apparatus according to Claim 10, wherein said bubble generating means generates bubble by precipitating a gas dissolved in the ink.

20 14. The printing apparatus according to Claim 10, wherein said bubble generating means generates bubble while preventing film boiling from occurring in the ink.

25 15. The printing apparatus according to Claim 10, wherein said plurality of channels are each provided with an electrothermal converter as means for generating ejection energy that causes the ink to be ejected, and said bubble generating means generates bubble

together with said electrothermal converter.

16. The printing apparatus according to Claim 10, wherein  
said recovery process means sucks and discharges the  
5 ink through said ejection opening.

17. The printing apparatus according to Claim 10, wherein  
said recovery process means discharges the ink through  
said ejection opening before a printing operation.

10 18. The printing apparatus according to Claim 10, further  
comprising means for heating said print head at a  
temperature used for normal printing or higher before said  
recovery process means discharges the ink through said  
15 ejection opening.